

t24_facirc_1

(TMc6FmD9RF9FDRq5o9fuXSQk3yvKQ69Wt1c)

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Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v11_struct_0 : \iota \Rightarrow o$ be given. Let $v1_circcomb : \iota \Rightarrow o$ be given. Let $v2_circcomb : \iota \Rightarrow o$ be given. Let $v3_circcomb : \iota \Rightarrow o$ be given. Let $l1_msualg_1 : \iota \Rightarrow o$ be given. Let $v4_msafree2 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v4_circcomb : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v6_circcomb : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $l3_msualg_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k3_circcomb : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r2_circcomb : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v4_msualg_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((v1_circcomb X0) \wedge ((v2_circcomb \\ & X0) \wedge (l1_msualg_1 X0)))) \Rightarrow (\forall X1.((\neg v2_struct_0 X1) \wedge ((v1_circcomb \\ & X1) \wedge (v2_circcomb X1) \wedge (l1_msualg_1 X1)))) \Rightarrow (\forall X2.(l3_msualg_1 \\ & X2 X0) \Rightarrow (\forall X3.(l3_msualg_1 X3 X1) \Rightarrow (((v6_circcomb X2 X0) \wedge \\ & ((v4_circcomb X2 X0) \wedge ((v6_circcomb X3 X1) \wedge (v4_circcomb X3 X1)))) \Rightarrow \\ & (r2_circcomb X0 X1 X2 X3)))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge (l1_msualg_1 X0)) \Rightarrow (\forall X1. \\ & ((\neg v2_struct_0 X1) \wedge (l1_msualg_1 X1)) \Rightarrow (\forall X2.((v4_msualg_1 \\ & X2 X0) \wedge (l3_msualg_1 X2 X0)) \Rightarrow (\forall X3.((v4_msualg_1 X3 X1) \wedge \\ & (l3_msualg_1 X3 X1)) \Rightarrow ((r2_circcomb X0 X1 X2 X3) \Rightarrow (k3_circcomb X0 \\ & X1 X2 X3 = k3_circcomb X1 X0 X3 X2)))) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge (l1_msualg_1 X0)) \Rightarrow (\forall X1. \\ & (l3_msualg_1 X1 X0) \Rightarrow ((v6_circcomb X1 X0) \Rightarrow ((v4_msualg_1 X1 X0) \wedge \\ & (v4_msafree2 X1 X0)))) \end{aligned} \tag{3}$$

Theorem 1

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((\neg v11_struct_0 X0) \wedge ((v1_circcomb \\ & X0) \wedge ((v2_circcomb X0) \wedge ((v3_circcomb X0) \wedge (l1_msualg_1 X0)))))) \Rightarrow \\ & (\forall X1.((\neg v2_struct_0 X1) \wedge ((\neg v11_struct_0 X1) \wedge ((v1_circcomb \\ & X1) \wedge ((v2_circcomb X1) \wedge ((v3_circcomb X1) \wedge (l1_msualg_1 X1)))))) \Rightarrow \\ & (\forall X2.((v4_msafree2 X2 X0) \wedge ((v4_circcomb X2 X0) \wedge ((v6_circcomb \\ & X2 X0) \wedge (l3_msualg_1 X2 X0)))) \Rightarrow (\forall X3.((v4_msafree2 X3 X1) \wedge \\ & ((v4_circcomb X3 X1) \wedge ((v6_circcomb X3 X1) \wedge (l3_msualg_1 X3 X1)))) \Rightarrow \\ & (k3_circcomb X0 X1 X2 X3 = k3_circcomb X1 X0 X3 X2))) \end{aligned}$$